

This Page Is Inserted by IFW Operations
and is not a part of the Official Record

BEST AVAILABLE IMAGES

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images may include (but are not limited to):

- BLACK BORDERS
- TEXT CUT OFF AT TOP, BOTTOM OR SIDES
- FADED TEXT
- ILLEGIBLE TEXT
- SKEWED/SLANTED IMAGES
- COLORED PHOTOS
- BLACK OR VERY BLACK AND WHITE DARK PHOTOS
- GRAY SCALE DOCUMENTS

IMAGES ARE BEST AVAILABLE COPY.

**As rescanning documents *will not* correct images,
please do not report the images to the
Image Problem Mailbox.**

PATENT ABSTRACTS OF JAPAN

(11)Publication number : 11-207042

(43)Date of publication of application : 03.08.1999

(51)Int.Cl. 7-53H 9/00
// A61F 2/56

(21)Application number : 10-011868

(71)Applicant : AGENCY OF IND SCIENCE & TECHNOL

(22)Date of filing : 26.01.1998

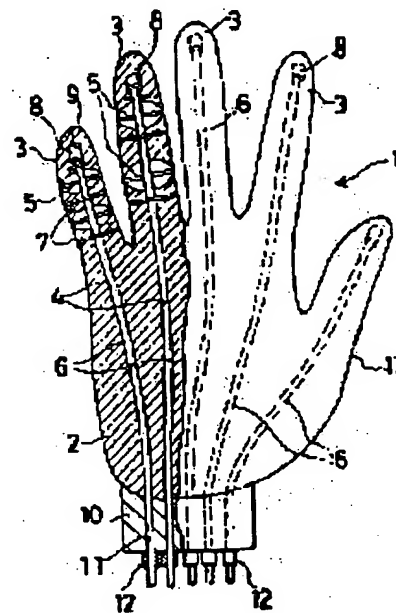
(72)Inventor : ISHINE KIMIO

(54) ARTIFICIAL ARM

(57)Abstract:

PROBLEM TO BE SOLVED: To produce an artificial arm approximate to a human hand.

SOLUTION: An artificial arm main body 2 from a wrist to finger tips is formed of rubber of a proper hardness and weight to bend the joints of the respective fingers 3 of the main body 2. Thin grooves opening to the side of a palm are provided in the range of length from the tip parts of the respective fingers 3 to the wrist to insert artificial muscle tendons 6 consisting of shape memory resin or its composite material as muscle tendons into the respective thin grooves. Tip parts on the finger tip sides of the muscle tendons 6 are fixed to the tip parts of the finger tips and the rear tip parts of the muscle tendons 6 are movably put through to stopper parts 12 provided at the wrist position of the main body 2.



LEGAL STATUS

[Date of request for examination] 26.01.1998

[Date of sending the examiner's decision of rejection]

[Kind of final disposal of application other than the examiner's decision of rejection or application converted registration]

[Date of final disposal for application]

[Patent number] 3062596

[Date of registration] 12.05.2000

[Number of appeal against examiner's decision of rejection]

[Date of requesting appeal against examiner's decision of rejection]

[Date of extinction of right]

* NOTICES *

Japan Patent Office is not responsible for any damages caused by the use of this translation.

1. This document has been translated by computer. So the translation may not reflect the original precisely.
2. **** shows the word which can not be translated.
3. In the drawings, any words are not translated.

DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[The technical field to which invention belongs] this invention relates to the prosthetic arm extremely approximated to a help.

[0002]

[Description of the Prior Art] In the cage which lost the object which an ordinary person loves, from recollection's etc., it leans and ** and a photograph may be seen. Moreover, since prosthetic arms, such as a mannequin doll, cannot be moved, they are deficient in change. Moreover, prosthetic arms, such as a robot with complicated movement, are also already proposed with very elaborate structure.

[0003]

[Problem(s) to be Solved by the Invention] Then, in recollection etc., only by seeing the photograph, depth perception cannot be tasted and it does not become sufficient comfort. Moreover, although an elaborate prosthetic arm moves almost like human being's hand by driving sources, such as a motor, being remarkably expensive not only but its movement is complicated.

[0004]

[Means for Solving the Problem] Then, this invention is what offers the prosthetic arm which can move so that human being's hand may be resembled extremely, even if it does not use a special driving source. While producing the prosthetic-arm main part from a wrist to a fingertip by the rubber of a moderate degree of hardness and enabling incurvation of the joint of each finger of the aforementioned prosthetic-arm main part The striation opened to the common side of a hand in the length range to a wrist is prepared from a part for the point of each finger. While inserting simulation **** which becomes each aforementioned striation from a shape-memory resin or its composite material as **** and attaching the fingertip side point of the aforementioned simulation **** firmly to a part for the point of a fingertip, it is the composition which it comes to insert in the stopper section which prepared the back end portion of simulation **** in the wrist position of a prosthetic-arm main part possible [movement].

[0005]

[Embodiments of the Invention] The gestalt of operation of the following this inventions is explained based on a drawing. The prosthetic arm 1 of this invention has the same prosthetic-arm main part 2 as the hand of human being who produced the previous portion from the wrist by the mold rubber which has a moderate weight and moderate hardness, and forms in the common side of the hand of five fingers 3 of the aforementioned prosthetic-arm main part 2 the striation 4 wide opened to the common side of the hand attained from a wrist to a fingertip.

[0006] and the joint portion of each finger 3 forms the V character-like slot 5 on sideways, enables it to be crooked about 90 degrees, and can move simulation **** 6 of the shape of a thin string which consists of a shape-memory resin or its composite material to the interior of each aforementioned striation 4 -- as -- equipping -- the open section of the aforementioned striation 4 -- deviation prevention of simulation **** 6 -- public funds -- it stops with an implement 7

[0007] The cylinder material 8 prepared at the nose of cam by the side of a fingertip is attached and attached firmly to **** 9 formed at the nose of cam of a striation 4, you insert a wrist side in the through-hole 11 formed in the wrist portion 10 of the prosthetic-arm main part 2, it makes it extend outside, and aforementioned simulation **** 6 holds an extension in a rubber stopper and the stopper section 12 which consists of other members. Since it separates from the cylinder material 8 from a dugout 9, it can detach, attach and exchange simulation **** 6 from a striation 4.

[0008] In addition, the prosthetic-arm main part 2 which is the above and comes to make puts an envelope 13 like a rubber glove outside, and is completed on it. Moreover, you may form the piece 14 of reinforcement which becomes the portion which formed the V character-like slot 5 of each finger 3 from artificial leather etc.

[0009] Since the prosthetic arm 1 of this invention is the aforementioned composition, it is in the state where pulled five simulation **** 6 and each finger 3 was made crooked, and stops the end face section of simulation **** 6 in the stopper section 12. Therefore, since a prosthetic arm 1 becomes like a fist, if human being's hand is slid in between each finger 3 and it grasps, a prosthetic arm 1 will serve as feeling which has shaken hands [hand / of people] with a feel which gets used to a hand and is bound tight moderately with the flexible property of simulation **** 6. Moreover, since it binds tight as time is formed in the state where it grasped, and the force declines, a thing called the unpleasantness by sensibility of the persistence by grasping for a long time can be lost.

[0010]

[Effect of the Invention] Therefore, according to this invention, it is easy, and the prosthetic arm of the size of the object for

males, the object for women, and various kinds is not only producible, but since there are few parts, structure can produce individually. And restoration is easy, if it not only can offer the prosthetic arm which was filled with depth perception, but has simulation **** and the envelope as a reserve, since there is necessary minimum movement even if it does not use especially the electrical energy from the outside. And the prosthetic arm of this invention can be performed for imagination free as a medium etc., the pleasure which produces itself can be experienced and it will be connected with recovery of many functions or recharge, and it can apply to the doll of a mannequin and others, or the combined use with media etc. can be aimed at, and practical value is high.

[Translation done.]

*** NOTICES ***

Japan Patent Office is not responsible for any damages caused by the use of this translation.

1. This document has been translated by computer. So the translation may not reflect the original precisely.
2. **** shows the word which can not be translated.
3. In the drawings, any words are not translated.

DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]

[Drawing 1] It is the front view which made the cross section the part which shows the gestalt of operation of this invention.

[Drawing 2] It is a vertical section side elevation for a finger part.

[Drawing 3] It is a plan for a finger part.

[Description of Notations]

- 1 Prosthetic Arm
- 2 Prosthetic-Arm Main Part
- 3 Finger
- 4 Striation
- 5 V Character-like Slot
- 6 Simulation ****
- 7 Metallic Ornaments for Deviation Prevention
- 8 Cylinder Material
- 9 ****
- 10 Wrist Portion
- 11 Through-hole
- 12 Stopper Section
- 13 Envelope
- 14 Piece of Reinforcement

[Translation done.]

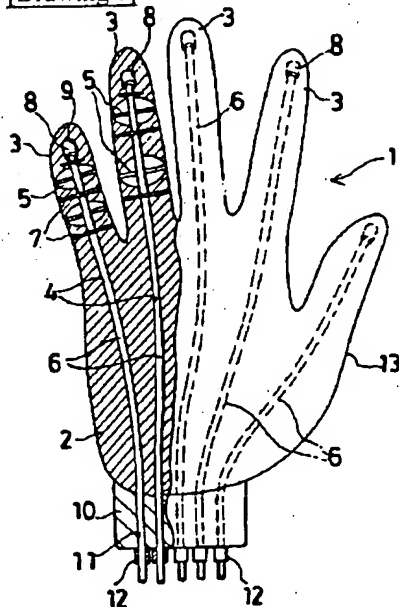
* NOTICES *

Japan Patent Office is not responsible for any damages caused by the use of this translation.

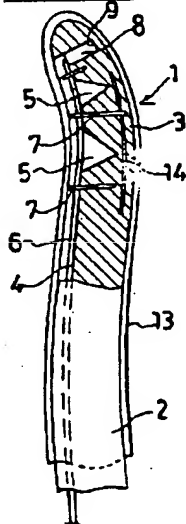
1. This document has been translated by computer. So the translation may not reflect the original precisely.
2. **** shows the word which can not be translated.
3. In the drawings, any words are not translated.

DRAWINGS

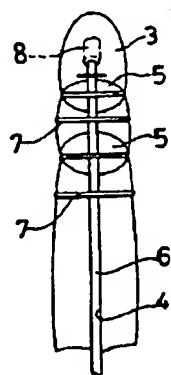
[Drawing 1]



[Drawing 2]



[Drawing



[Translation done.]